

# M M Abid Naziri

[mnaziri@ncsu.edu](mailto:mnaziri@ncsu.edu) | [github.com/abidnazirisami](https://github.com/abidnazirisami) | [abidnazirisami.github.io](https://abidnazirisami.github.io) | [linkedin.com/in/abidnazirisami](https://linkedin.com/in/abidnazirisami)

## About Me

PhD Researcher specializing in **Software Testing** for learning-enabled systems. I develop automated testing techniques for Deep Learning Libraries (**PyTorch**, **TensorFlow**) and **Autonomous Driving Systems** in a simulation environment (**CARLA**). I have reported **102** bugs (**78** confirmed) to **PyTorch** and **TensorFlow** to date [\[list\]](#).

## Education

**NC State University**, PhD in Computer Science (4th year)

May 2027 (Expected)

**Advisor:** Dr. Marcelo d'Amorim

**Award:** Graduate Merit Award - Summer 2025

## Research Projects & Publications

### Testing Deep Learning Libraries via Neurosymbolic Constraint Learning

ICSE 2026 (Accepted)

**M M Abid Naziri\***, Shinhae Kim\*, Feiran Qin, Saikat Dutta, Marcelo d'Amorim

\*Equal contribution

- Designed and implemented **Centaur**, a neurosymbolic constraint learning tool for DL APIs to generate valid test inputs.
- Uncovered **23** new bugs in **Tensorflow** and **PyTorch** (**11** confirmed).

**Venue:** IEEE/ACM International Conference on Software Engineering (ICSE 2026)

### Misbehavior Forecasting for Focused Autonomous Driving Systems Testing

ICSE 2026 (Accepted)

**M M Abid Naziri**, Stefano Carlo Lambertenghi, Andrea Stocco, Marcelo d'Amorim

- Developed **Foresee**, a tool to enhance simulation-based testing of self-driving software by identifying and analyzing near-miss scenarios, improving failure detection efficiency and effectiveness.
- **Foresee** exposes **128%** more failures than state-of-the-art failure predictors.
- **Foresee** also enhances the capability of an existing technique **DriveFuzz** by upto **94%**.

**Venue:** IEEE/ACM International Conference on Software Engineering (ICSE 2026) [\[preprint\]](#)

### BugsInDLLs: A Database of Reproducible Bugs in Deep Learning Libraries to Enable Systematic Evaluation of Testing Techniques

ISSTA 2025

**M M Abid Naziri**, Aman Kumar Singh, Benjamin Wu, Feiran (Alex) Qin, Saikat Dutta, Marcelo d'Amorim

- Developed an open-source dataset **BugsInDLLs** with **112** reproducible bugs across three popular DL libraries: **JAX**, **Tensorflow**, and **PyTorch**.
- Added support for benchmarking other fuzzing tools with an included integration of **FreeFuzz**.

**Venue:** The ACM SIGSOFT International Symposium on Software Testing and Analysis (ISSTA 2025: Tool Demonstration Track) [\[pdf\]](#)

### Improving Deep Learning Library Testing with Machine Learning

AST 2026 (Accepted)

Facundo Molina, **M M Abid Naziri**, Feiran (Alex) Qin, Alessandra Gorla, Marcelo d'Amorim

- Applied ML classifiers to infer the validity of an input before executing to increase efficiency of DL Library fuzzing tools.
- The classifiers achieved an accuracy of **91%** in predicting input validity.
- They also improved an existing fuzzing tool called **ACETest** by increasing its validity ratio from **29%** to **61%**.

**Venue:** 7th ACM/IEEE International Conference on Automation of Software Test (AST 2026)

### Evaluating the Effectiveness of Coverage-Guided Fuzzing for Testing Deep Learning Library APIs

Submitted

Feiran Qin, **M M Abid Naziri**, Hengyu Ai, Saikat Dutta, Marcelo d'Amorim

- Conducted a study to assess the effectiveness of coverage guided fuzzing to test Deep Learning Library APIs.
- Reported **42** new bugs in **Tensorflow** and **PyTorch** (**8** Fixed).

[\[preprint\]](#)

## Experience

---

**Senior Software Engineer, Enosis Solutions – Dhaka, Bangladesh**

Mar 2019 – Jul 2022

- Developed scalable web applications using Vue JS, TypeScript, and ASP.NET Core, including a project management tool deployed to 270 employees and a Welder Management system
- Developed desktop applications DesignCalcs and ProWrite for pressure vessel design, adding features, fixing bugs, and creating unit/regression tests
- Managed CI/CD pipelines, configured testing servers, and ensured smooth system operations
- Operated in an **Agile** development process in a development team of 7 people
- Mentored new recruits, conducted code/design reviews
- Collaborated with clients and team members via **JIRA**

## Technologies

---

**Languages:** Python, R, C#, Delphi, Java, C/C++, JavaScript, TypeScript, Bash

**Technologies:** PyTorch, TensorFlow, CARLA Simulator, Docker, Github Actions, ASP.NET Core, React JS, Vue JS, TestComplete, DUnit